Notebook, N-88-11-02

This notebook contains dated entries from November 1888. All entries are by Edison. At the beginning of the book are undated notes and drawings relating to phonograph designs, cylinder compounds and designs, and insulation compounds. There are also notes and calculations regarding electric lighting and a memorandum about a combination with Thomson-Houston. At the end of the book are notes on chemical experiments, a drawing of a dynamo armature, and notes and drawings pertaining to phonograph designs. The pages are unnumbered, and the book has been used in both directions. Approximately 140 pages have been used.

N-88-11-02

5/720
144

6% 720
144
864
7% = 144
1008
1 yr

50.000 #
2500
52,500
2625

52500
2625
55125 2 yr
5
275625

55125 3rd
2756
57881
5
289405

57881 4th
2894
60775

74
40
2960

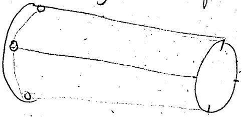
74/40049(544
370
300
296
400

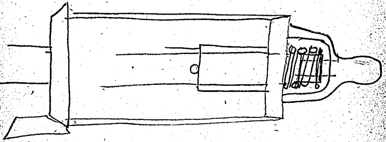
54400-

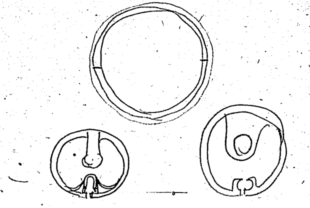
Try Chlorine Compounds 4
Hot so as to Liberate Nascent
Chlorine in all the Waxes
Oils & Pitches, Asphalts,
Bitumens & Balsams to
dehydrogenize them to increase
percentage of C to H,
if Cl should form HCl & also a
Cl atom replace a H in addition
then after Compound has been
dissolved out from Cl salt,
It can then be dechlorinized
by boiling with Zinc or Iron
~~[illegible]~~ dust —
Thus with asphalt perhaps a
Solvent Compound could be
obtained very rich in C
which was badly soften at
7@800 Fahr & never melt
before Carbon

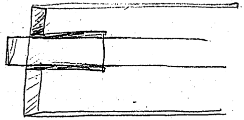
In the Carbonaceous matter obtained by Dehydrating Organic Compounds | try & dissolve out compounds which soften at high temperature but do not melt,

Taper phonogm Cylinder
to get shells off Easily





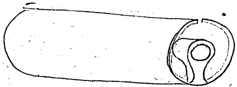




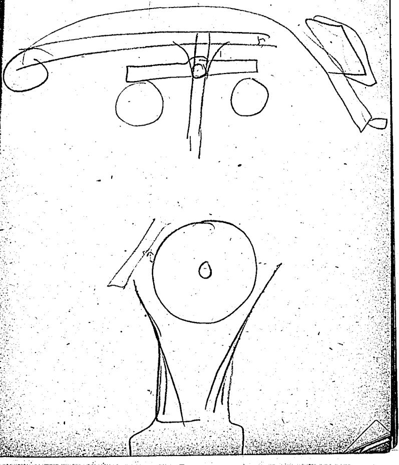
54400 /
5
272000

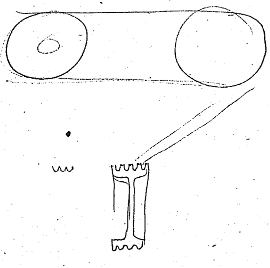
54400
2720 — 1 yr
57120
2856
59976 — 2nd
2998
62974 — 3rd
3148
66122 — 4th

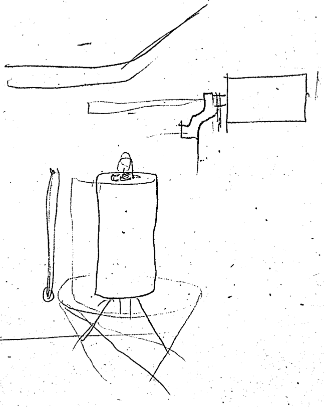
66.122

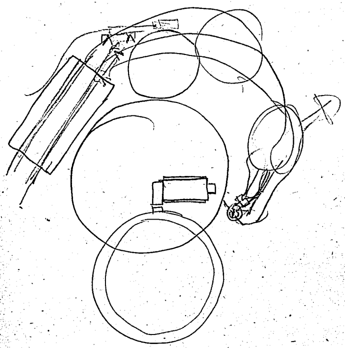


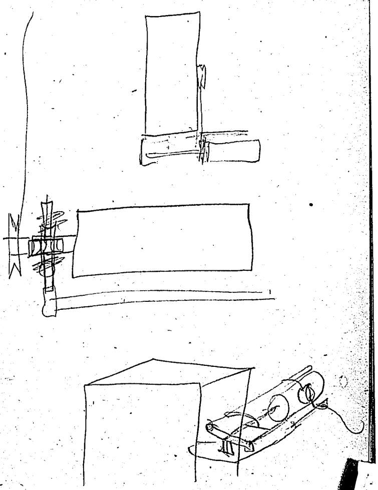
Thin shell split.

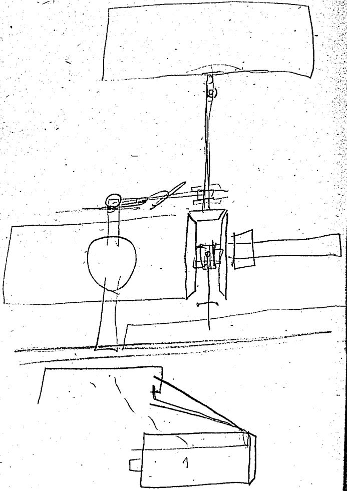




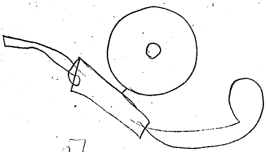


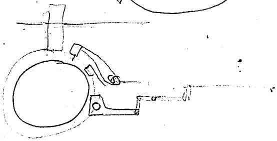


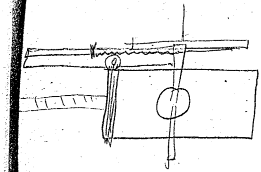


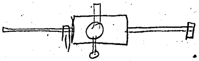


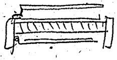
3000
4
20,00

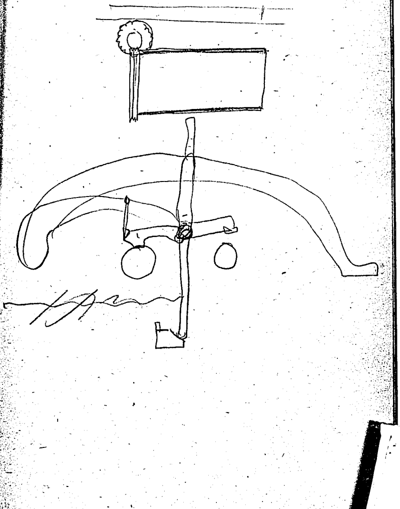


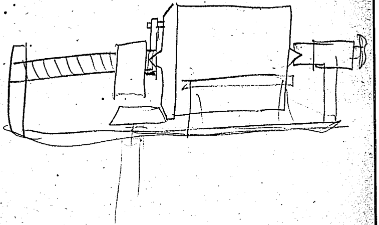


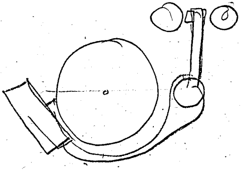


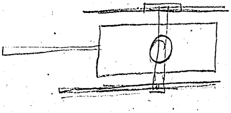


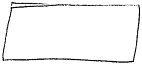


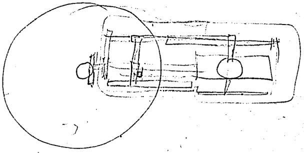


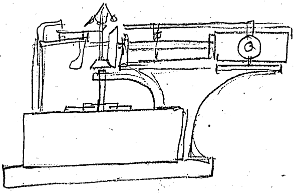


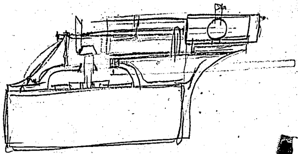


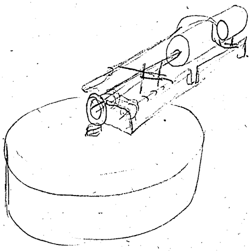


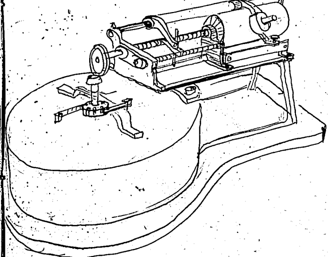


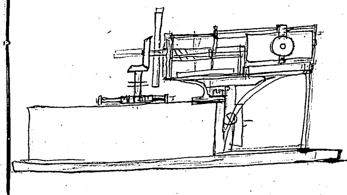


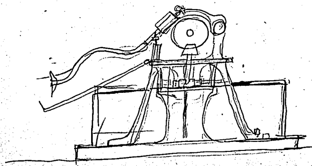

a

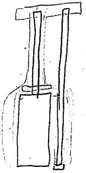


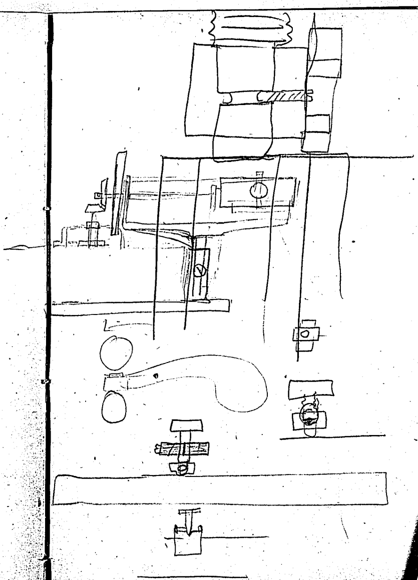




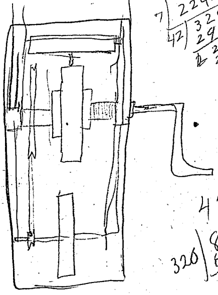








1 ½ c



7) 2240

42) 320 (7.6

294

260

252

76

60

456

456

320) 856 (2.67

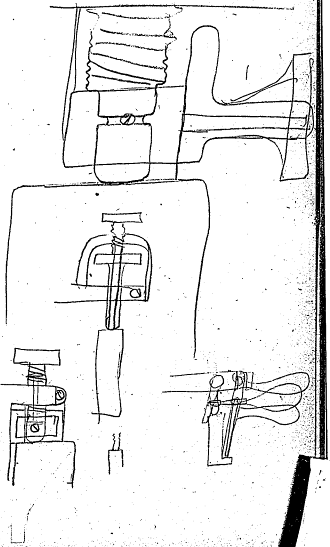
640

2160

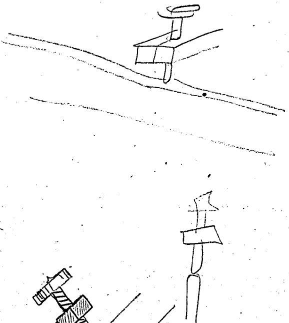
1920

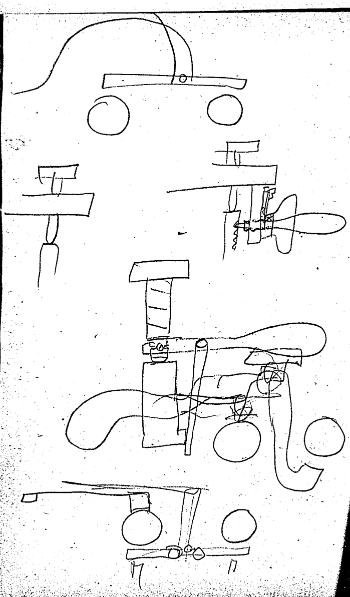
2400

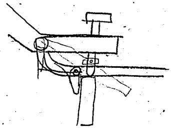
5.34

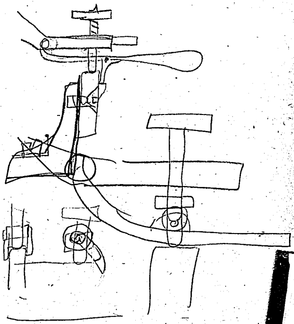


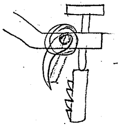
20.34.

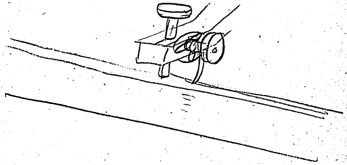




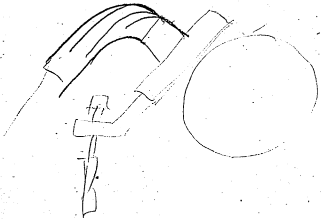


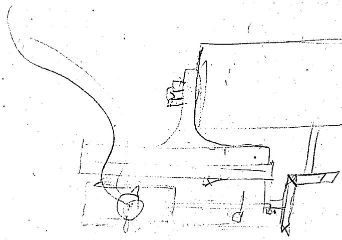




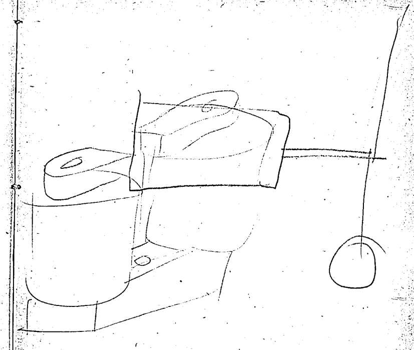


6. 10.

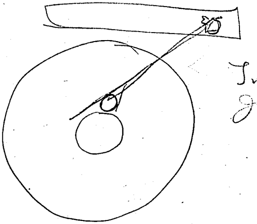




#91

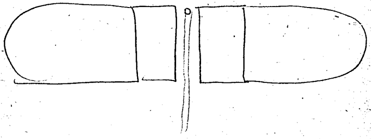


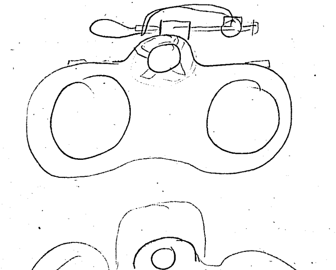
Charge magnets with a constant Current

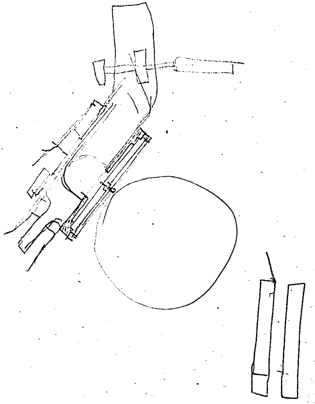


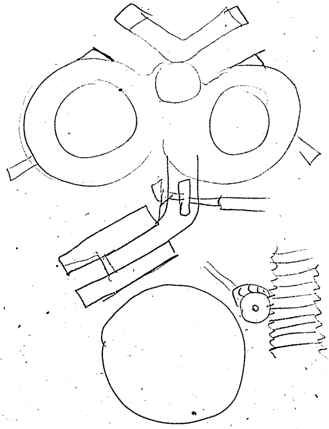
Turntable

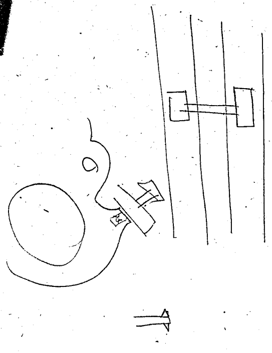
Joaquim Dali

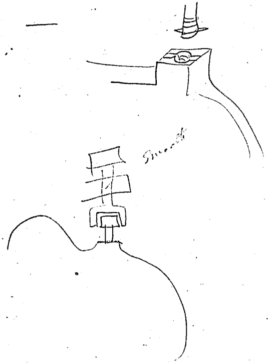


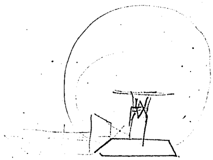


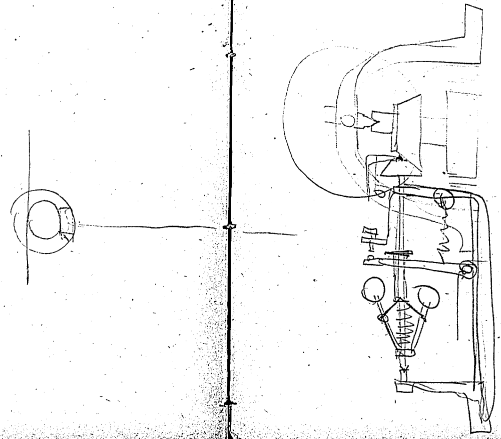


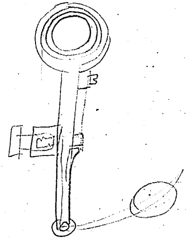


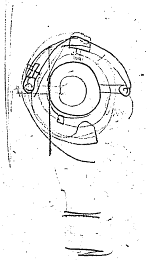


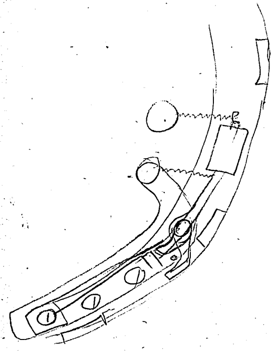

Smooth

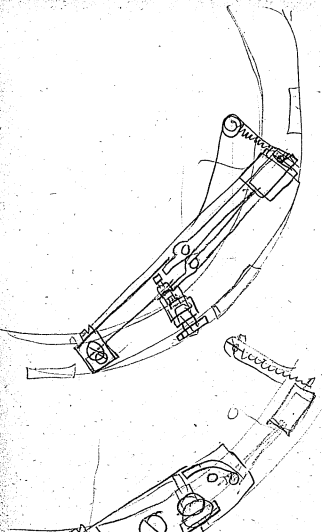


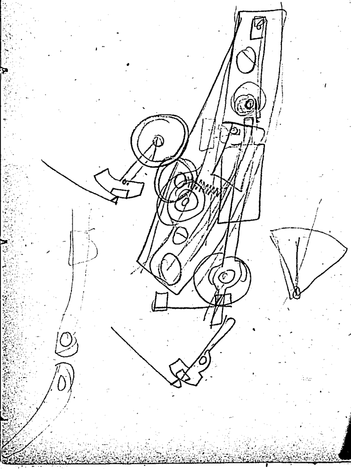


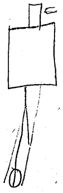




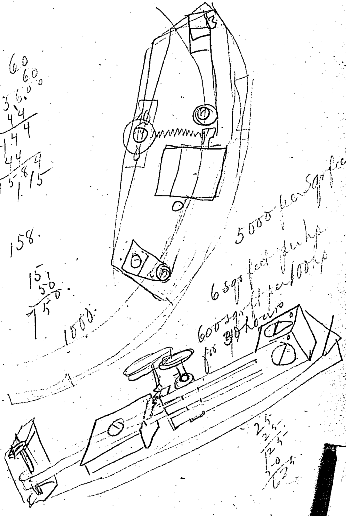








60
60
.3600
44
144
144
15,84
158.
15
50
750.
1000.

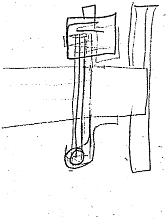


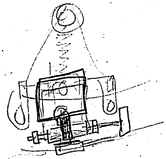
5000 kw Sq feet

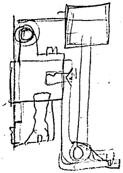
6 sqr feet per hp

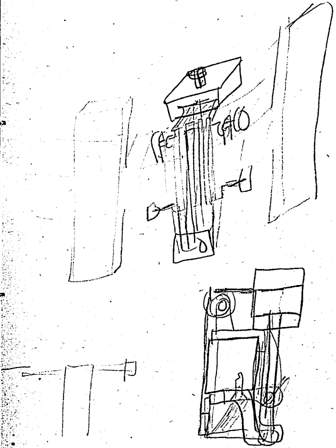
600 sq ft per 100 hp
for 30 hours

25
25
125
50
625









200
40
60
100
100-
50
100
100
100
50
900

60
26
100
200
50-
40
20
100
8
50
694

40
100
100
50
40-
60
30
20
8
60
508

70
100
50
40
100-
60
40
100
50
100
710

100
8
100
100
8-
50
60
40
50
60
576

50
20
30
04
30-
00
40
60
00
80
314

100
50
100
100
50-
100
50
40
100
100
740

100
50
100
100
20-
50
60
50
06
00
571

100
8
60
100
60-
80
40
60
20
100
628

50
40
200
100
50-
200
50
60
70
50
870

80
50
100
50
40-
50
100
100
50
50
670

60
50
100
100
100
60
60
100
68
90

40
100
20
100
20
00
200
50
00
100
630

100
30
60
100
50
40
80
50
00
00
510

40
50
00
50
100
100
100
100
60
40
640

20
4
100
00
70
00
200
20
60
100
574.

L

80
4
50
20
20-
50
40
80
200
40
584

00
50
60
00
40-
50
30
40
100
8
378

100
100
00
30
40-
60
40
00
60
100
530

100
6
30
80
100-
60
20
100
00
60
556

00
50
100
60
100-
40
50
6
60
50
516

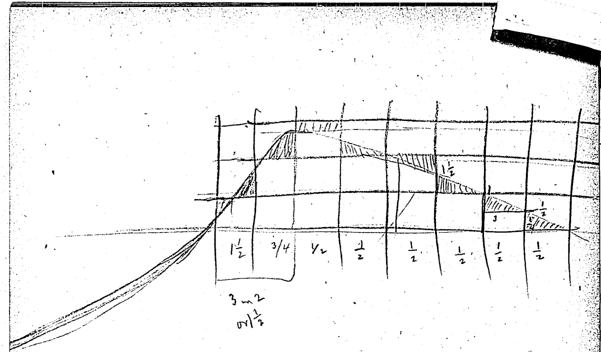
20
100
100
20
40
100
00
40
100
50
570

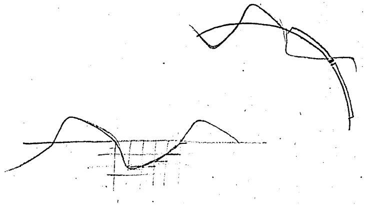
50
50
60
40
50
40
00
40
50
50
430

100
50
00
40
30
40
50
00
40
40
340

00
00
50
100
50
4
100
70
50
40
464

50
100
40
100
20
80
50
50
6
20
516


1 1/2
3/4
1/2
1/2
1/2
1/2
1/2
1/2
1 1/2
1/2
3
1/2
3 ~ 2
or 1 1/2



		Population
9000 —	54 —	486000
12000 —	67 —	804.000
15000 —	25 —	375.000
18000 —	25 —	450.000
21000 —	24	504 000
		2619,000
29000	20 —	580 000
37000	12	444.000
41000	7 —	287.000
52000	10 —	520000
59000	4	236000
78000	2 -	156000
100000	3	300000
116000	4	464000
136000 —	1	136000
155000 —	3 -	465000
177000 —	1	177000
216000 —	1	216000
255000 —	2	510000
330000 —	2	660000
530000 —	2	1,060000
837000		837000
1.206000	1	1.206000
		8.234000

Subtract 5.051,000 gone

Leaves 3.183,000.

~~8 10~~

847000 1

~~100 000~~ |||

~~9000~~

~~21 000~~

~~12000~~

~~15 000~~

~~37 000~~

~~78 000~~ ||

~~18 000~~

~~155 000~~ |||

~~29 000~~

~~333000~~ |

~~362000~~ ||

~~166000~~ |

~~503000~~ |

~~52 000~~ ||||||||||

~~41 000~~ |||||||

~~255 000~~ ||

~~16~~

~~116000~~ ||||

~~59~~ ||||

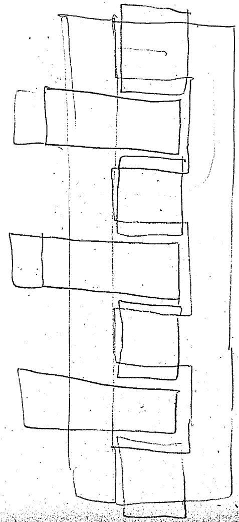
~~216000~~ 1

1.206000 1

~~136000~~ 1

~~177000~~ 1

8 254 000
5 051 000
3.203 000



10 Poles 10 poles - 6 to foot.

60 ft. 3. 40

60) 10000 (166.
600
4000
3600
400

29000
20
580,000

~~84~~
9000
486,000

37000
12
74000
7000
37
4441

67
12000
134000
67
804000

24
21000
24000
48
24

41000
7
287000

25
15000
125000
25
375000

25
18000
200000
25
450000

12

36
6
6.0

21000
24
84000
42
504000

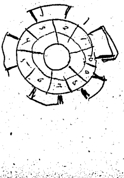
15
45

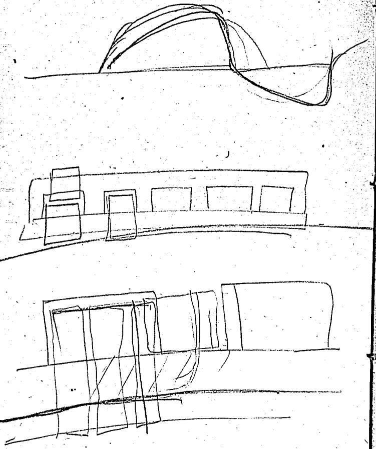
36.36) 250 (7. 1/8
252

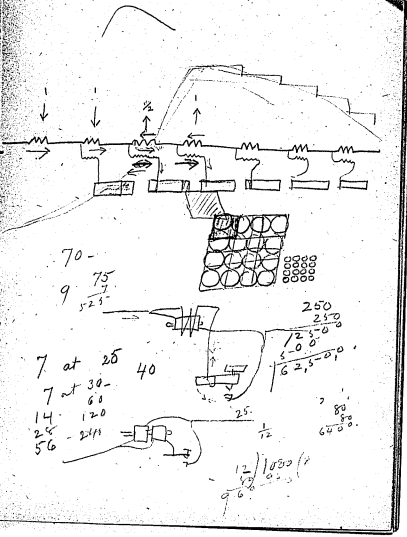
20) 500 (25
400
100

40 ft.

250







70 -

9 75
7
5 2 5

250
250
125 0
50 0
62,5 0,0

7 at 25 40

7 at 30 -
60

14 120

28 240

56

25.

1/12

80
80
6400

12) 1080 (
80
96

70000
52500
70000
22500
51000
24500
20000
35000
48000
393,000

50
5
56

110.

555000
393000
162,000

150.

75 - Var 25 p ct.

300 - 75
150 . . 37.

150 phono-

150.

Total friction - 100
Motor & phono
Variation in friction
10.

300 -

150
37 - Var

150 -
37 -

150
18 -
9

150
139 -

Anchoic acid
anchoates = Mp 110 C
Hard -

Arachidic acid & ates.

Arsenate of lead [illegible]
Cakes together doesnt melt
Insulation

Stanous Arsenate - tin heating
with aqueous arsenic acid.
Eliminates H & forms gelatinous
mass - Insulation

Aspartic acid -
aspartates gummy

Resin from acting on asphalt
oil with Nitric acid

Benic
Benates

Tartrate glycerine

will [illegible] in bolting
Stick mops with wax fat
or asphalt for phono
Cylinder

Fred make a silk
also bolting cloth.
[illegible] - shellacked

1000

.35 —

1 M — 31.

1 $\frac{1}{2}$

get List

Organic bases with which ~~to~~ Combine the fatty acids

Camphal is one

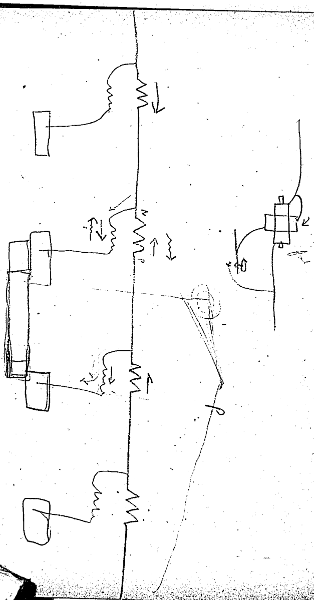
Camphic acid & Camphate good

Camphoramic acid & alcs

Capric acid & Caprates

Caprate of Sodium Evaporates Leaves a horny mass without trace of Crystalization

phono



Caproic acid & salts,
(fatty acid)

Caprylic acid

fatty A

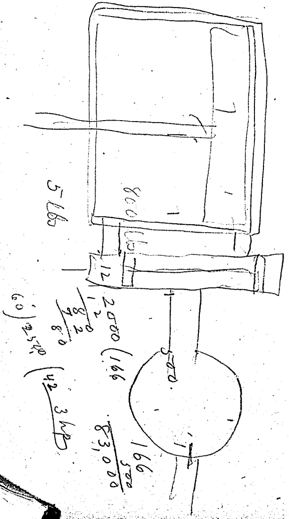
Carmel precipitate with
Lead - see if resultant
any good phono Insulatn
etc

100
75
-30
205

1500
300
450,000

500

Caramelin black
shiny infusible Insoluble
form Caramel.


800 lbs
5 lbs
12
500
2000 (.166
12
82
82
80
60) 2520 (42 3 hp
166
500
83,000

See Art Caramel Watts
Reg Vols -

Casein in solution is precipitated by all Earthy & metallic Salts giving [illegible] Compounds

Melacinnamene
Transparent Cut with knife at ordinary temp - but on heating draws out threads
See Cinnamene Watts

Chlorine passed over

Cinnamic acid prep.

tough greasy substance

50

150 ~~cc~~
150 –
300
10
50.
50
710.

10

1000 –

3000.

2000

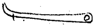
3.

45

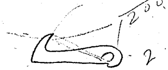
312
45
1560
1248
1404

140 cc

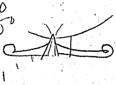
3500-
1800
5000-
250-



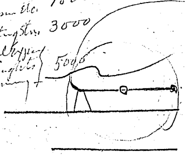
600
20
12000

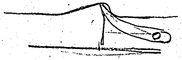


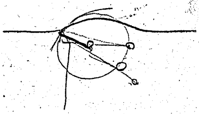
85000
37500
47500



Bldg	8000-
Eng-	12000-
Dynamos	11000-
Piping	3000-
Belting	800-
Meters	2000-
Freighting	800-
Pressure etc.	1800
Fitting stns	3000
genl shipping Freights Engineering	5000







Receipts 9600
Cost. 6155 –
P ~~Profit~~ 3445 – =

8000.

39
4

Recem 19200
4632
11568

3200 –
60

Coal. 600
873
1477 –
657
2124

9600
3
28800
9756
19044

18,200

6155 –
1477
7632
2124
9756

1600 Lt –

3.30
30
705.00

Manager – 2000 –
Engineer – 1200 –
Fireman – 657
Meter Man & Clerk – 600
Repair man – 650 –
Boy 250

4557 –
725
Coal –
Lamps – 873
6155 –

15
12
3.0
15 0.
18 30

365
180
2920
365
65700

– 9600 –

890 105 110 – 725

32000. 6000.

500 450.4

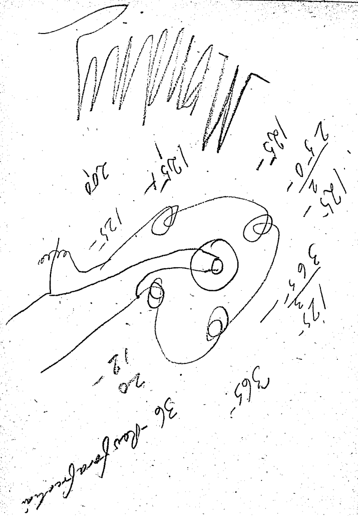
312
280
24960
624
87360

312
2
624 –

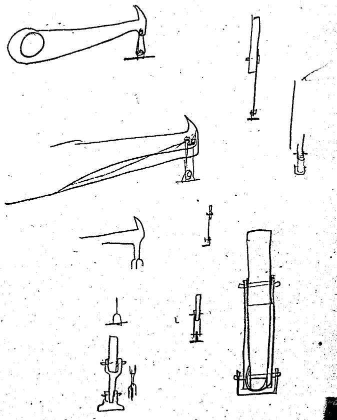
1205
27
875
250
4373
8
2

15600
9000

700 / 4800



125-
2
250-
125-
125
365-
3
125-
200
125-
365-
20
12-
36 -



Tribromobenzenesulphonic acids

The amide $C_6H_2Br_3, SO_2NH^2$ seperates from aquous sol red powder slightly sol Hot water. blackens without melting at 210 @ 220 and carbonizes at higher temperature giving off white sublimate Watts Pt 1st 3rd Sup page 241 —

The amide - $C_6H_2Br_3, SO_2NH^2$ Turns brown 220 volatilizes with decomposition at 228
Watts Pt 1 3rd Sup p 242

Pentabromobenzenesulphonic acid

~~Chloride $C_6Br_5SO_2Cl$~~. The amide $C_6Br_5SO_2NH_2$ deposited from Hot water as crystaline powder solvable alcohol It blackens without melting at 250: C
Pt 1st 3rd Sup Watts p 244

Nitrodibromobenzenesulphonic acid
acid blackens at 100 without melting
Pt 1 3rd Sup Watts p 245

Benzenesulphonic acids
– Contn. Several
NO_2 Br Br Br. blackens, see table
– Pt 1 3rd Sup p 257

Nitrobromobenzenedisulphonic acid
forms uncrystalizable salts with
Ammonia Barium & Lead
Pt Watts 3rd Sup p 258

See 5th line from bottom page
258

Diazoxybenzoic acid
Ammoniumsalt dries
upon Evaporation to a
brown transparent Varnish
Bariumsalt very peculiar
is Electric jumps in basin
for hours
Pt 1 3rd Sup 278 –

Salycylic acid added to
glue makes it more tenacious

312 800
249.6 0

50.
10000.
800.

Rov

1600
3
600) 4800 (

1600
15
8000
1600
24000

Dynamo

15.
20.
30
249
160
409

30000 for 1600 Lights.
profit 20 pct. 6000-
800
5,200 - TH Make

Royalty to us of 50c Light
$800.

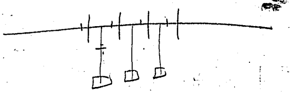
1600 Lts at 15	240
1600 Sockets 15 -	240.
Miscellaneous -	100
Voltmeters, etc.	20
Dynamo repairs.	900
	2300 - profit to us

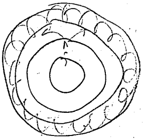
Yearly profit Lamp Renewals
$249.60

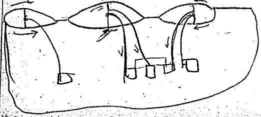
1600
3
4800

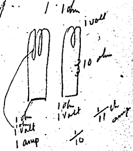
.150
31200
0
1560
31200
4681

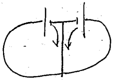
WE adopt TH arc & sell where we can
getting ~~[illegible]~~ they taking
profit They sell [illegible] Incandescents
we taking profit —
all Lamp renewals come to
us ~~on new 6½ — on all 6½~~
~~already done~~ — TH ~~buy Lamps~~
~~from us at 50 cents to supply~~
~~such renewals~~ turn over to
us all their Isolated
Lamp renewals and buy
all Lamps from us for their old
+ new Central Stations at 50 cents
~~and on all new Stations~~
~~Started under new deal~~
~~40 cents. we not to sell in~~
~~Small~~

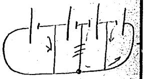


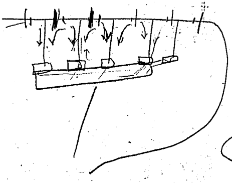


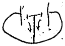


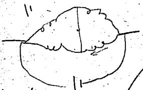

1 : 1 ohm
1 volt
10 ohm
cable
1 ohm
1 volt
1 amp
1 ohm
1 volt
1/10
1/11 th amp

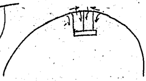


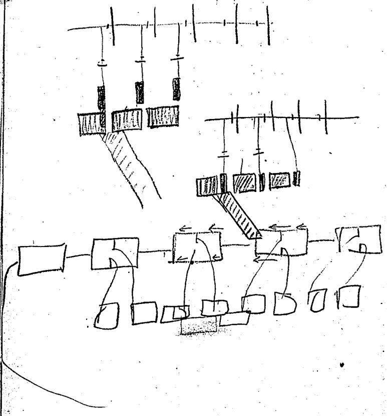












580,000
444 000
287 000
520 000
236 000
156.000
300 000
464 000
136 000
465 000
177 000
216 000
510 000
660 000
1.060 000
837 000
1.206 000

8,254,000
2 619 000

10873 000
5 051 000

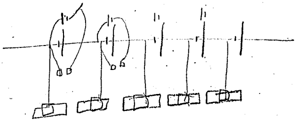
5 8 22 000

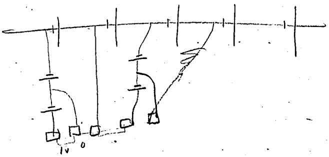
5822000
2619000

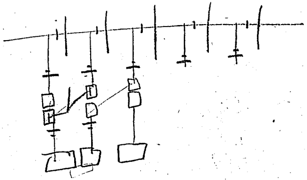
3,203000

2C

676







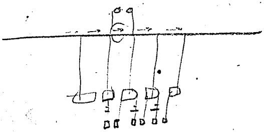
51 000
1,206.000
90 000
362 000
566 000
503 000
255 000
51 000
116 000
27 000
48 000
32 000
30 000
55 000
39 000
25 000
46 000
216 000
26 000
847 000
89 000
43 000
41 000
4.764 000

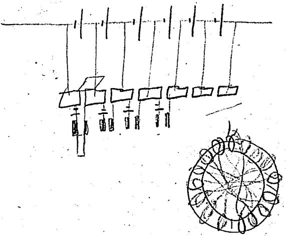
45 000
42 000
177 000
23 000
287 000

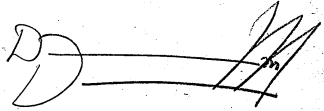
4,764 000
287 000
5,051 000

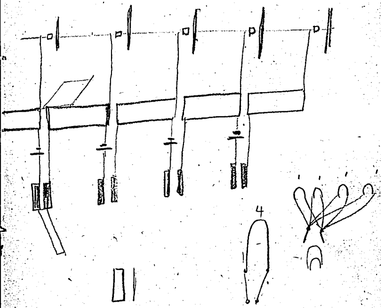
8,234 000
5,051 000
3,183 000

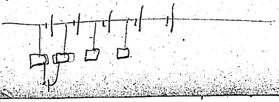
9 10

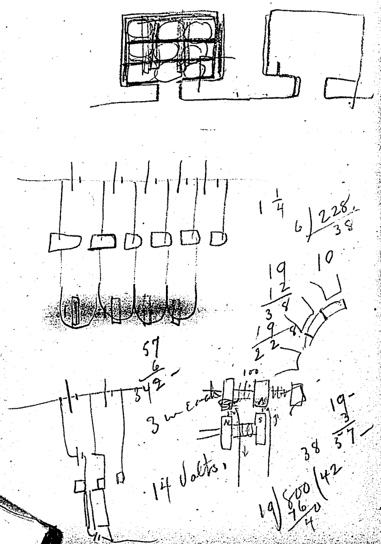


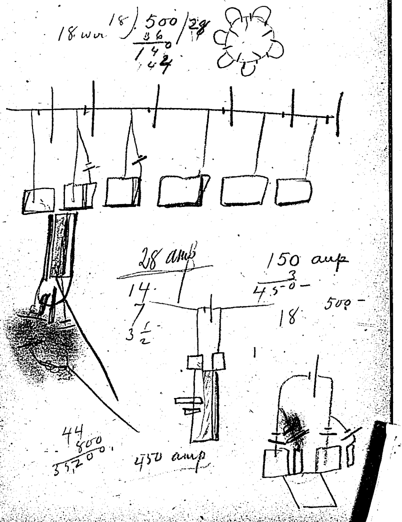


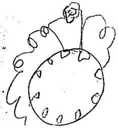


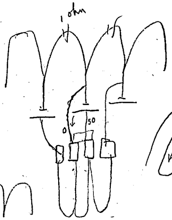

4

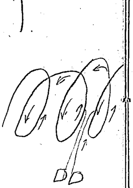


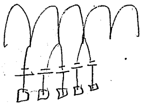

1 1/4
6) 228
38
19
12
38
19
22
10
57
6
342 -
100
3 w Ends
N
S
N
S
14 Volts,
19-
3
57 -
38
19) 800 (42
760
4

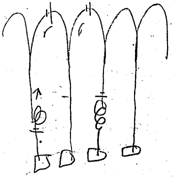

18 wir
18) 500 (28
36
140
144
28 amp
14
7
3 1/2
150 amp
3
450 -
500 -
18
44
800
35200.
450 amp

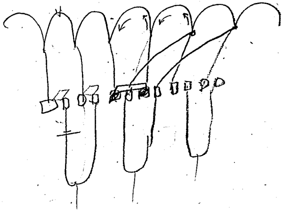


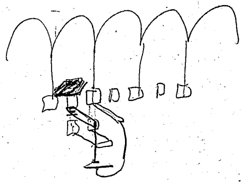

1 ohm
0
50

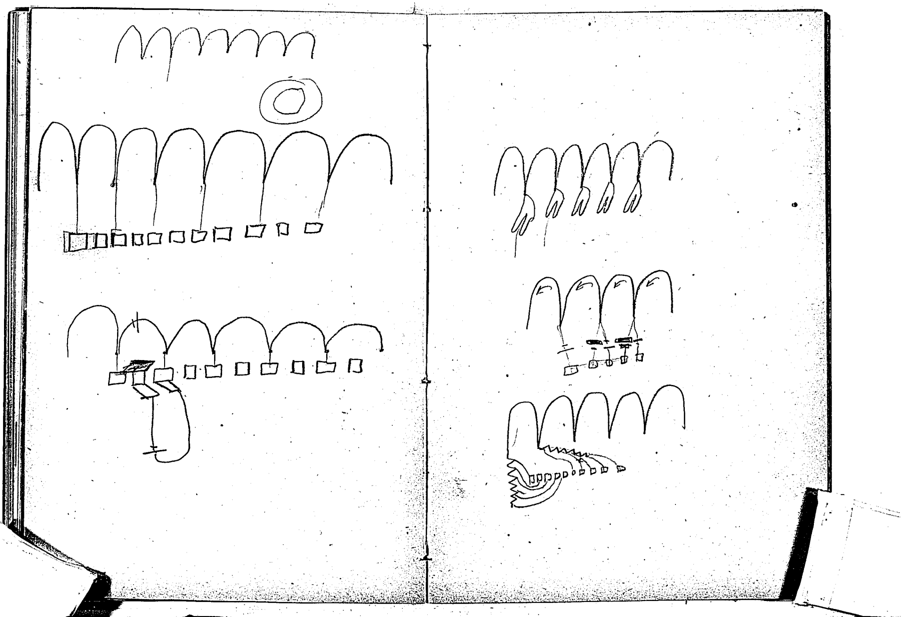


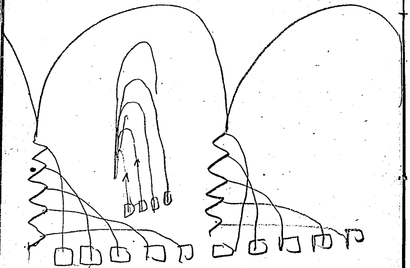


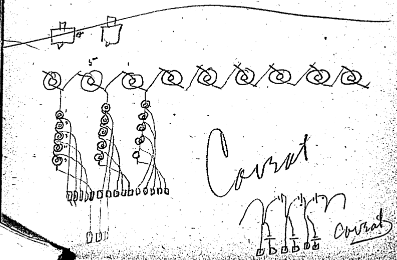






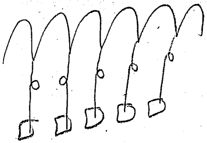


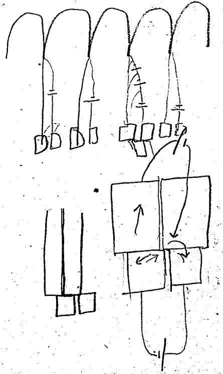


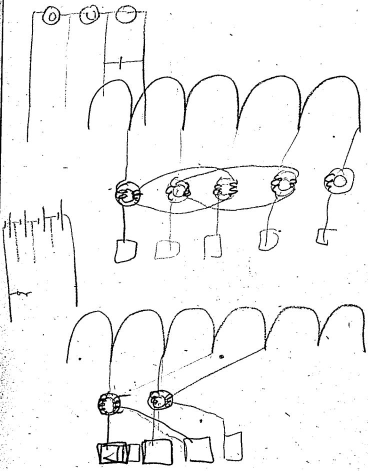


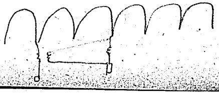
Covrat

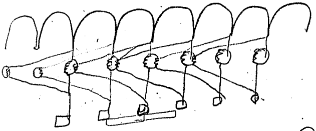
Covrat

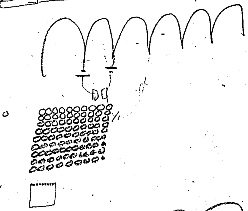


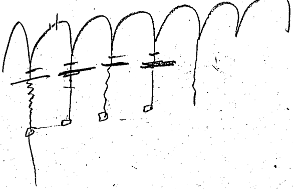


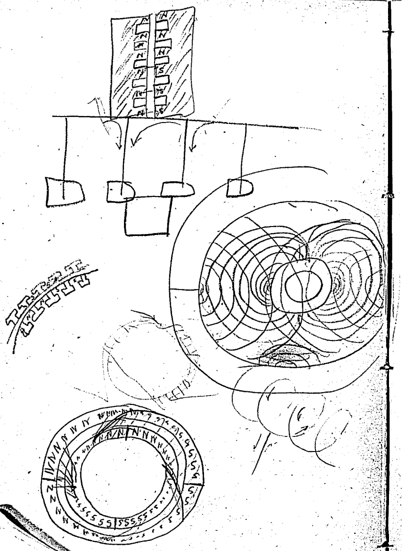


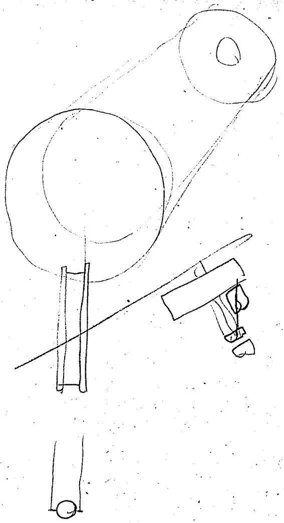


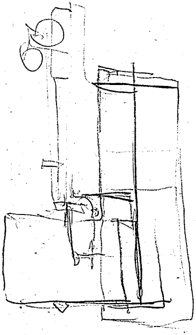


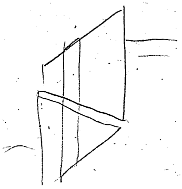


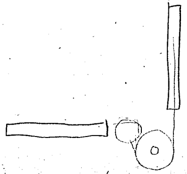



N
S
N
S

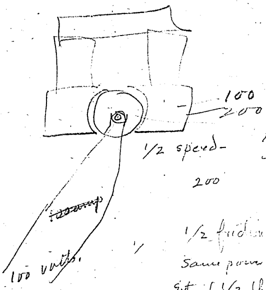








2 volts - 2 ohms - 1
1 - 2
1/2. - 4


100
200
~~100 amp~~
100 volts.

1/2 speed-

1000
500-

200

1/2 friction -

Same power

Extraf 1/2 the def
in speed

3 pct.

1.8 pct

1 yr 4000. 3rd 72
2 8000 " ~~192~~
3 12.000 " 312
16000

2040.

72
17
504
72
240 / 1.224.

160
72

6

120
240
360
480
600
720
740
860
980
1020
1220
1340
1460

1680
1800
1920
2040
18480
10

180

120
11
120
120
132

240
72
312

120
12
24
120
144

120
13
360
120
156

127000 - 40.000.

13.000. $1\frac{1}{3}$ pct.

68000
27000
17) 41.000
34
~~1~~ 708

(2.4

127000 -

120.
72
72
264

192

10 years

1000 - 3 .7
1000 6 1.4
1000 9 2.1
1000 12 3 3 pct
4 / 7.2
1.8. 1st yr

120
17
84
120
1204

1.80

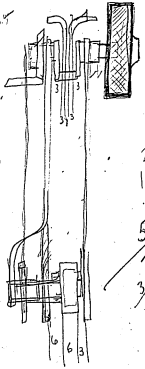
120
14
480
120
1680

120
15
600
120
1800

120
16
720
120
1920

$\frac{36 \times 2}{72}$ $2\frac{1}{2}x$

72) 36000 (500.
360



7

500

50000

5

50000
36
300000
150000

265
126500

50.000 = = x
72
100000
350000
36000 13 #

50,000.

36000.

1250 —

125 —

285 #

4000

400#000 -

3000 900.

4500,

12000

85
10000
85000 00

12
6000
72000
36
108

15000 30
450000

125 00
5
625 00

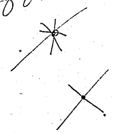
56000
4
224000

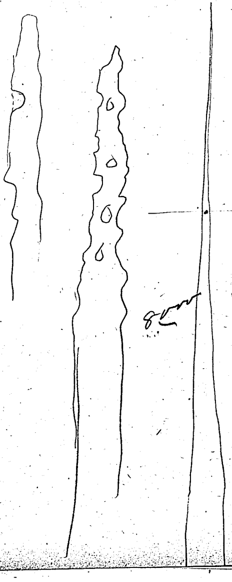
18 8500
4
52000

65000
6
390000

125 100
12500 1000

400000





4000

71
4000
284,000

4000 B
26
8000 - m
208000

on 1500 binders
on 2500 mowers

6000 B -
6000. M -

284000
208.000.
492,000 net
106 500
50 000
648,500
72 000
24 500
~~7~~44,000
~~2~~225 000
150 000
375 000

~~Stk for 15 [illegible] B~~
" ~~2500 M~~
Stockfor 1500 B. - Labor 15 - mal 40 - Cost 15
" 2500 M - 6 Stock - 12. 6

22500
15000
37500.

2500
26
15000
5000
65000
15000
50000

1500
15
7500
1500
22500 -

2500
6
15000

1500
71
1500
10500
106.500

1500
15
7500
1500
1500) 22500 (15
1500
7500
7500

2500
6
2500) 15000 (6
15000

4500 B
3500 m-

16
7

4500
16
27000
4500
72000

3500
7
24500

[THIS BOOK WAS USED IN BOTH DIRECTIONS. THE FOLLOWING PAGES WERE FILMED FROM THE BACK END FORWARD.]

[N-88-11-02]

China Clay-
Terra alba.
Alabaster slabs
Grahamite a solid hydrocarbon found plentifully in US. W Va, etc. allied to Asphalt, jet,

[illegible] H_2O is not decomposed Except by interposition of some dissolved Compound Try Chl Sulphur or some Electrolytic Compound dissolved in Bisulphide Carbon so as to get a deposit of Carbon by direct Electrolysis

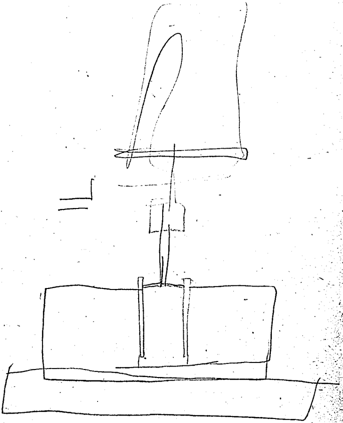
---

as there is great deal gases dissolved in Iron Copper heat same in Vacuo containing Hydrogen to reduce the O to H_2O & absorb H_2O by phos anhy

~~probably~~
Why was pianoforte steel
decarbonized in Vacuo if its
hardness is due to Carbon
perhaps the Carbon merely
Causes it to solidify in a
peculiar way - Carry these
Experiments further &
determine if this can be
done on large scale —

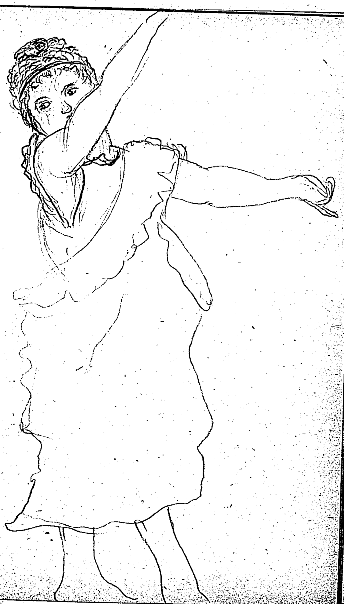
---

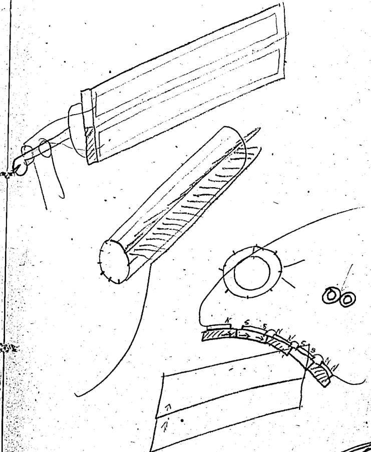
get some CP Dextrine &
(squirt in fils. This don't
melt I think) & will
make an Easy working Dextrine
stiff—ordinary Dextrine
contains Starch)

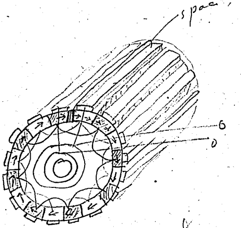


Try some softening Material oil balsam etc. with Carnauba alone.

Heat junctions of Hardrubber & its opposite say amber sealing wax, etc & then use ~~abt~~ Collectors not touching. The necessity of two dissimilar materials proves the Rubbing E is of Thermo Electric Origin




N
S
S
N
N
S
S
N
N

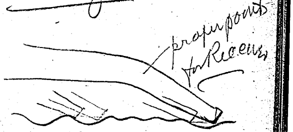


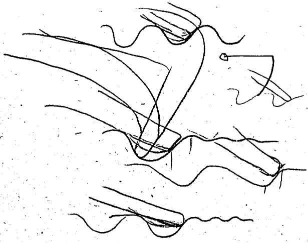
Radiant heat

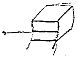
Black Vulcanite for P – some other dielectric (white) for N – faced on top with Metal principle Hyp. claims that junction of 2 dielectrics by rubbing becomes charged solely by thermo electric due to friction

Nov 2 1888

Phonogh

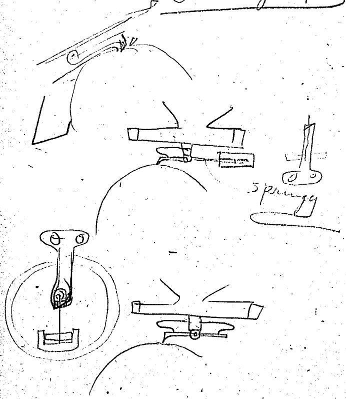

proper points for Receiver



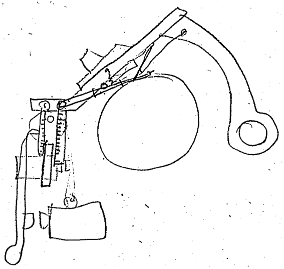


Nov 2 1888

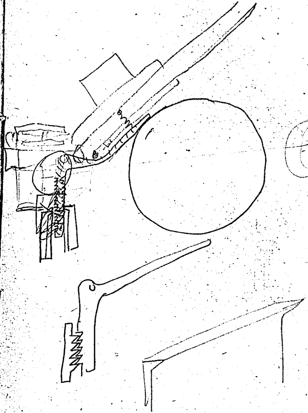
Phonograph



Nov 2 1888 phonogh



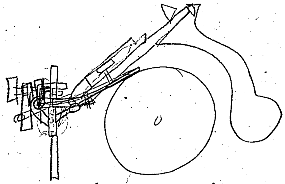
Nov 2 1888 phonogh

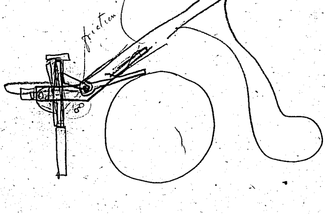


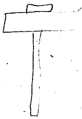
⑥

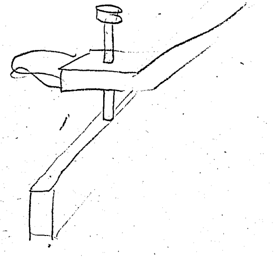
Nov 2 - 88

plough

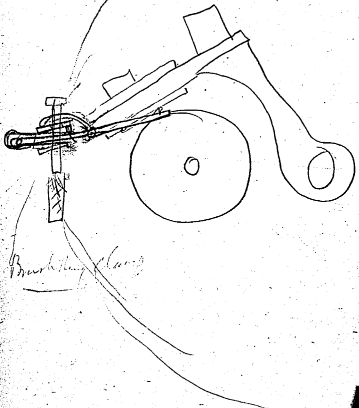






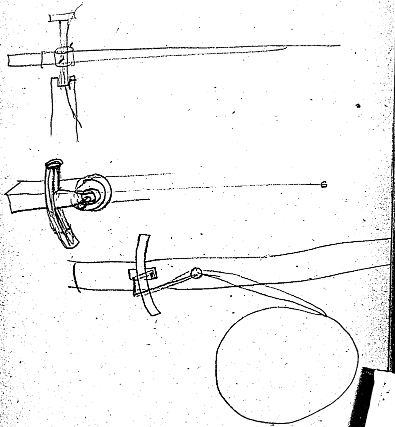


Nov 2 1888 TAE

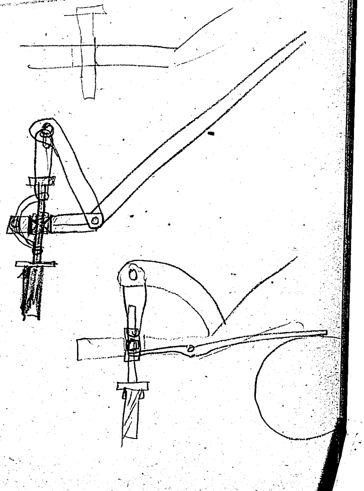

Brush Holding Clamp

Signed

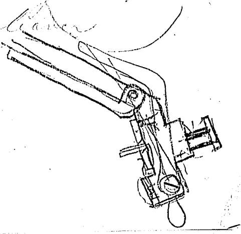
Nov 3rd 1888 Tate phonograph



Nov 3 1888 TAE phonograph

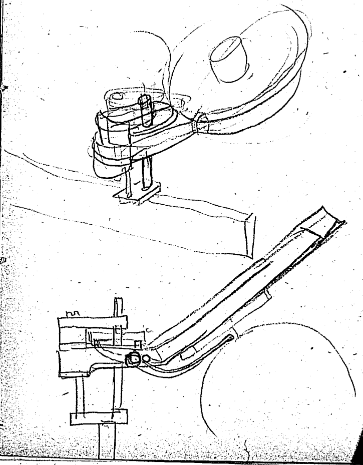


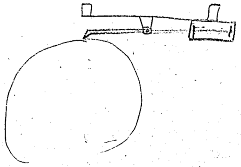
Set this magnet back 1/16 inch also the Bridge that carrys ~~shaft~~ on lever



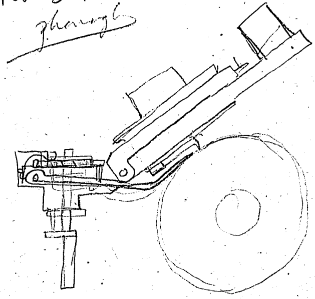
Nov 3 1888

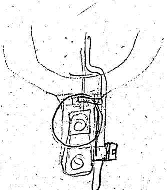
TAE phonogh

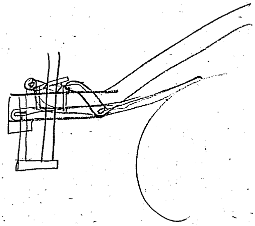
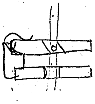




Nov 3 1888
phonograph





Nov 3 1888 Toy phonograph